



VIRGINIA COASTAL RESILIENCE MASTER PLAN PHASE ONE, DEC 2021

**CE&H Heritage Civic League Meeting
April 12th, 2022**

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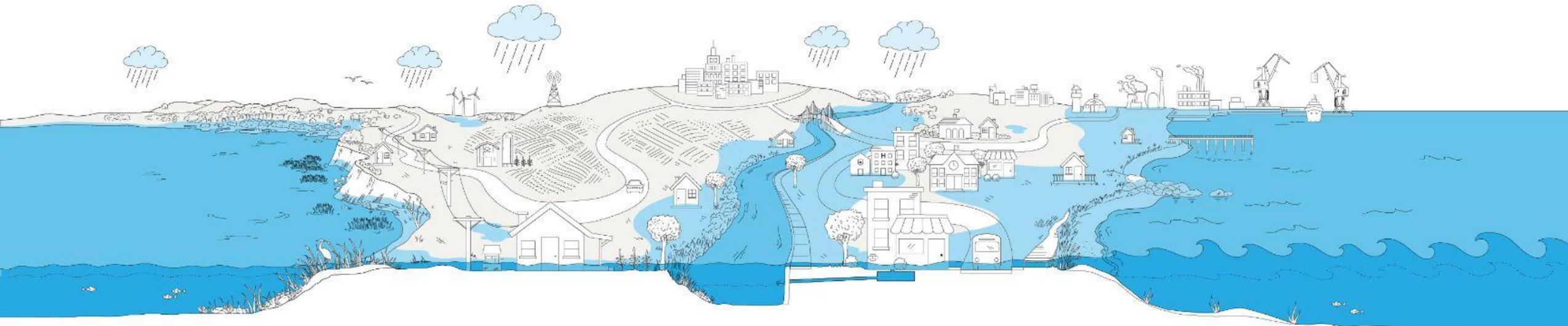


Outline

- Why This Plan
- What We've Done
- What We've Learned
- What We're Doing About It
- What's Next

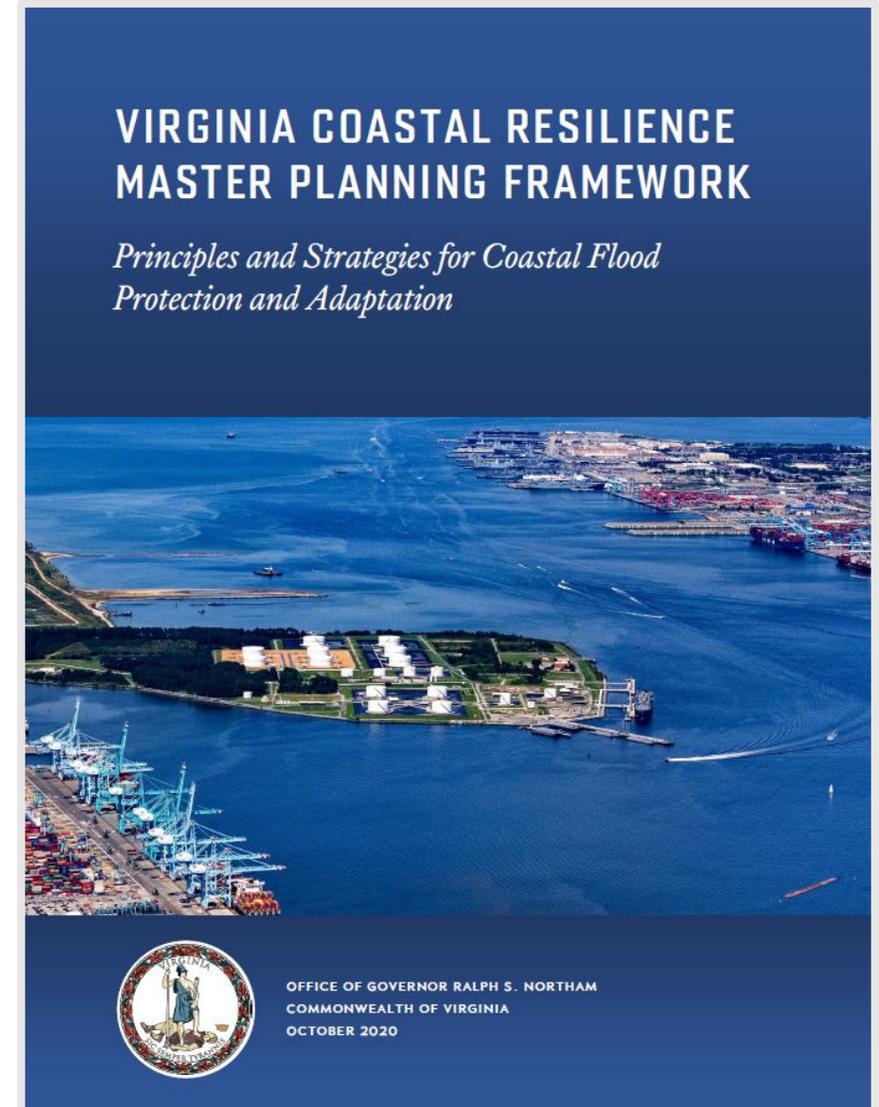


Why This Plan?



Guiding Principles

- **Acknowledge climate change and its consequences**, and base decision-making on the **best available science**.
- Identify and address **socioeconomic inequities** and work to **enhance equity** through coastal adaptation and protection efforts.
- Recognize the importance of **protecting and enhancing green infrastructure** like natural coastal barriers and fish and wildlife habitat by **prioritizing nature-based solutions**.
- Utilize **community and regional scale planning** to the maximum extent possible, seeking region-specific approaches tailored to the **needs of individual communities**.
- Understand **fiscal realities** and focus on the most **cost-effective solutions** for protection and adaptation of our communities, businesses and critical infrastructure.



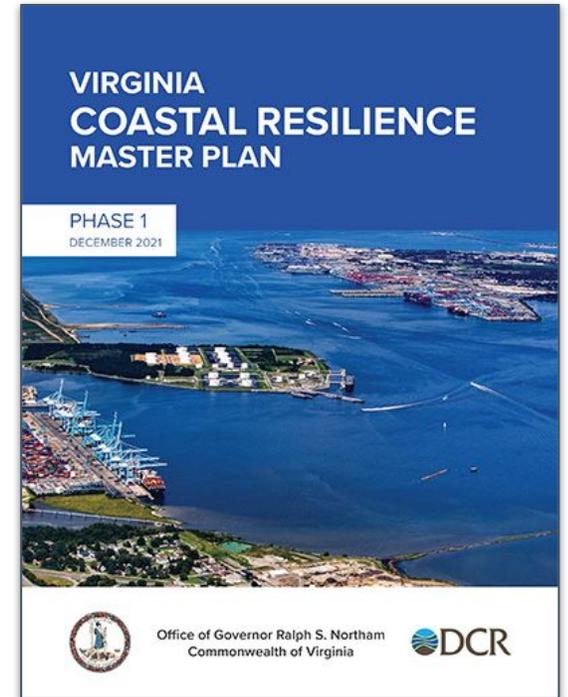
Goals

1. Identify and prioritize projects to **increase the resilience of coastal communities**, including both built and natural assets at risk due to flooding and sea level rise
2. Establish a **financing strategy**, informed by **regional** differences and **equity** considerations
3. **Incorporate and promote climate change projections** into Commonwealth's programs addressing coastal adaptation and protection
4. **Coordinate state, federal, regional, and local** coastal region adaptation and protection efforts

What We've Done



The Process



Virginia Coastal Resilience Master Plan



2021 Virginia Coastal Resilience Master Plan



Coastal Resilience Web Explorer



Open Data Portal



Master Planning Framework



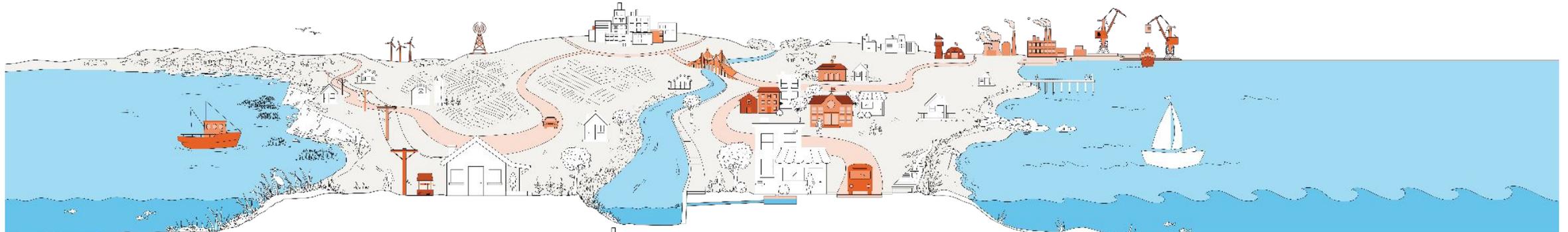
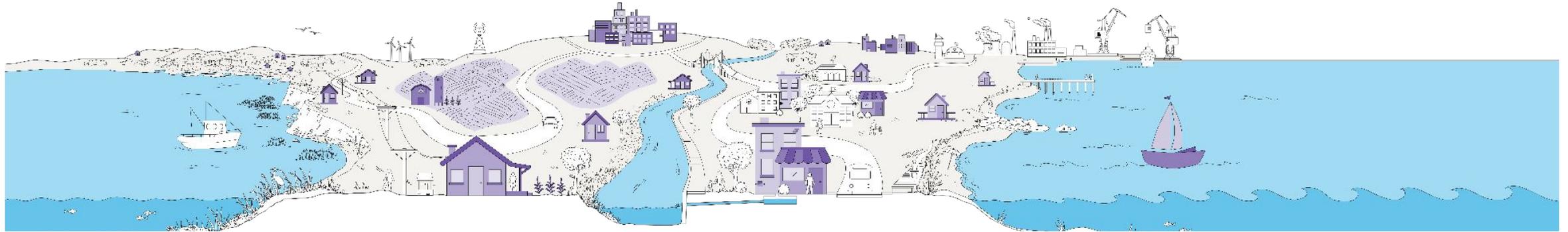
Technical Advisory Committee



Outreach and Engagement

dcr.virginia.gov/crmp/

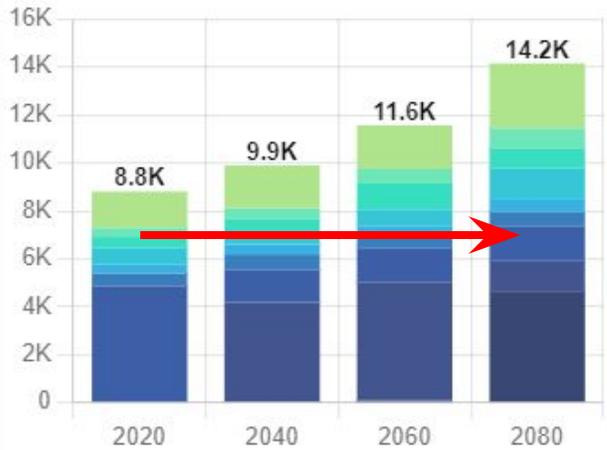
What We've Learned



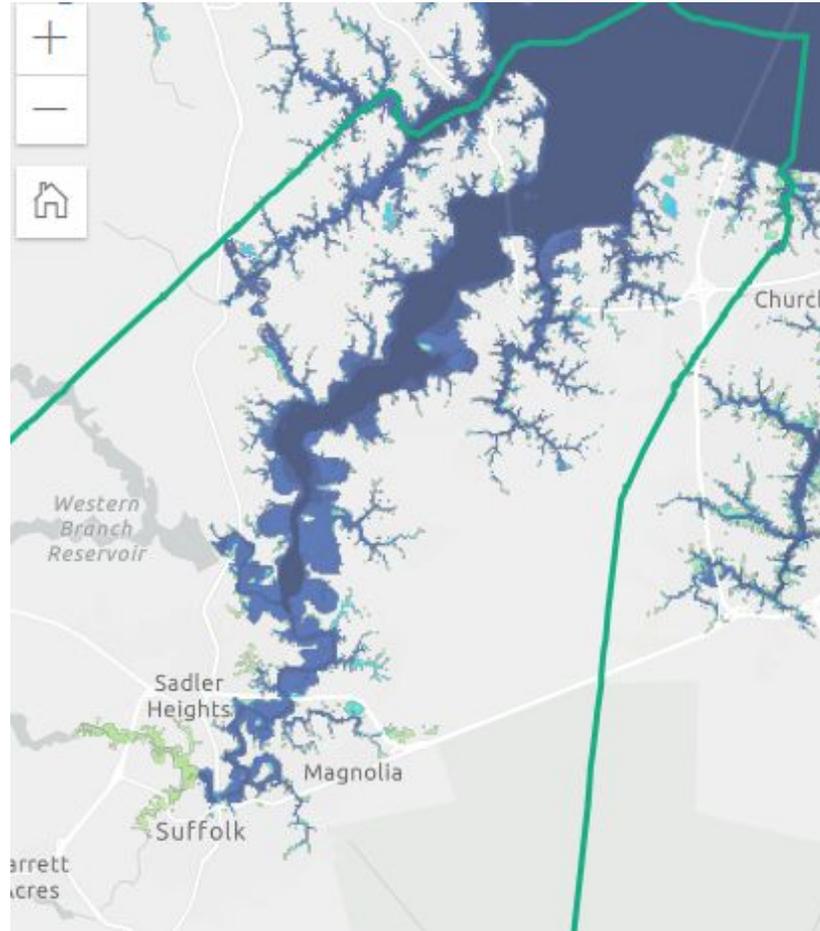
Coastal Flood Hazard with SLR [NOAA 2017 Int-High]

2020 2040 2060 **2080**

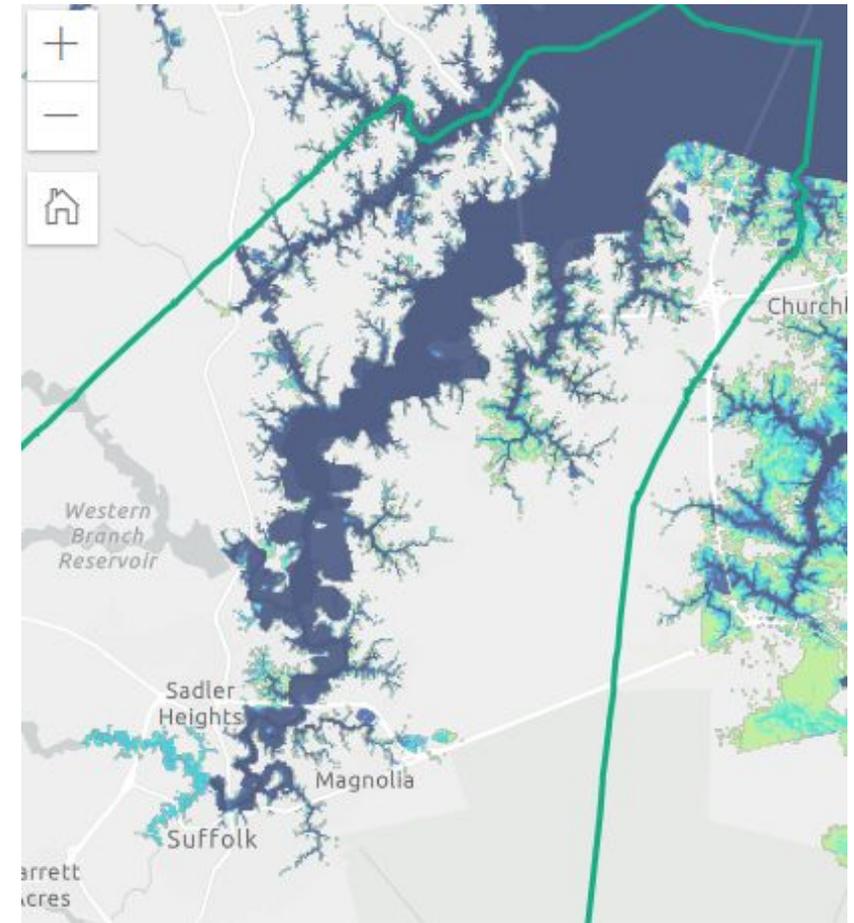
Acres of Land Area Inundated Across Flood Event Type



- Mean Low Water
- Mean High Water
- 50% Annual Exceedance Probability (2-Year Flood)
- 20% Annual Exceedance Probability (5-Year Flood)
- 10% Annual Exceedance Probability (10-Year Flood)
- 4% Annual Exceedance Probability (25-Year Flood)
- 2% Annual Exceedance Probability (50-Year Flood)
- 1% Annual Exceedance Probability (100-Year Flood)
- 0.2% Annual Exceedance Probability (500-Year Flood)



2020



2080

Coastal Flood Hazard with SLR [NOAA 2017 Int-High]

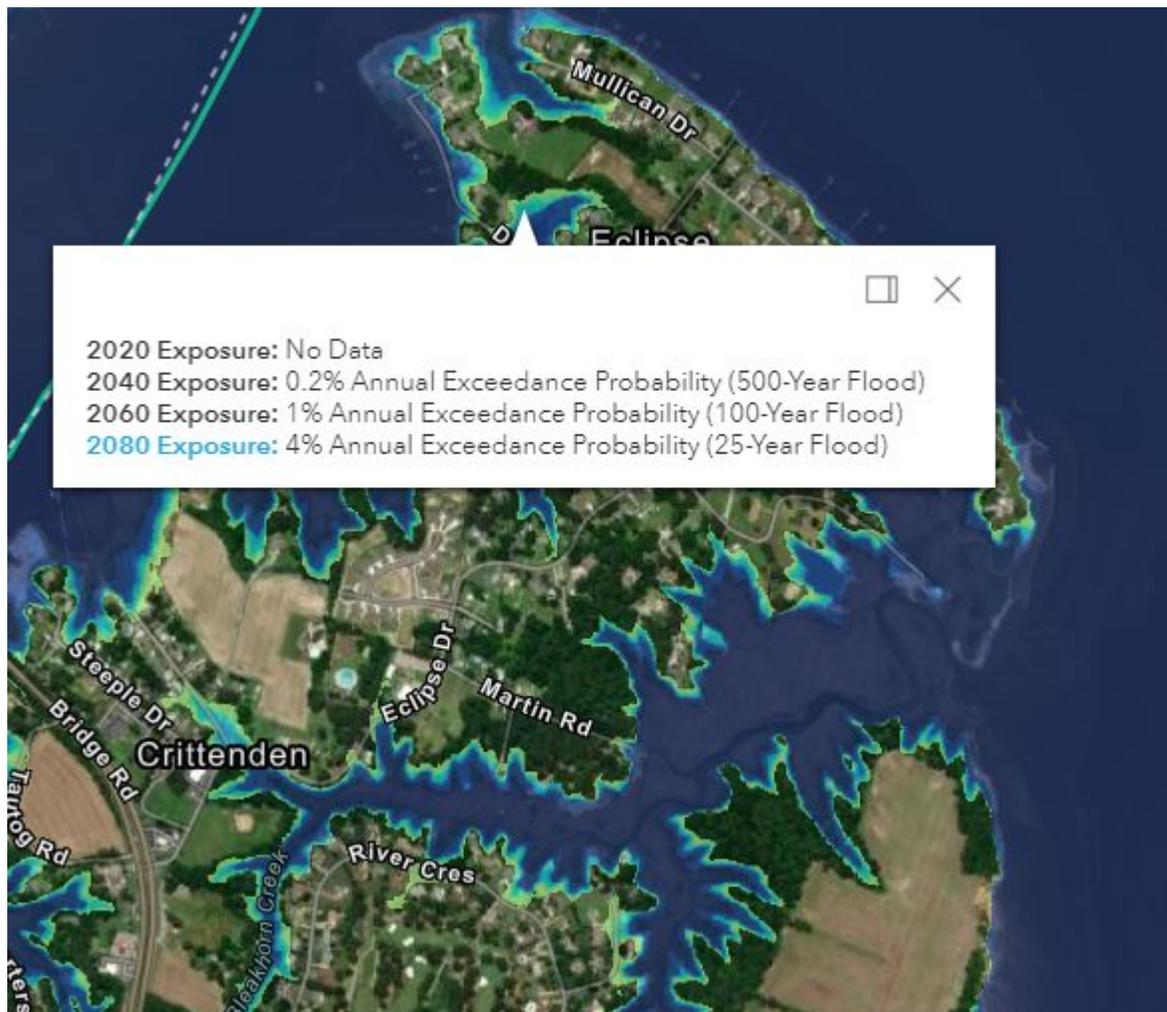
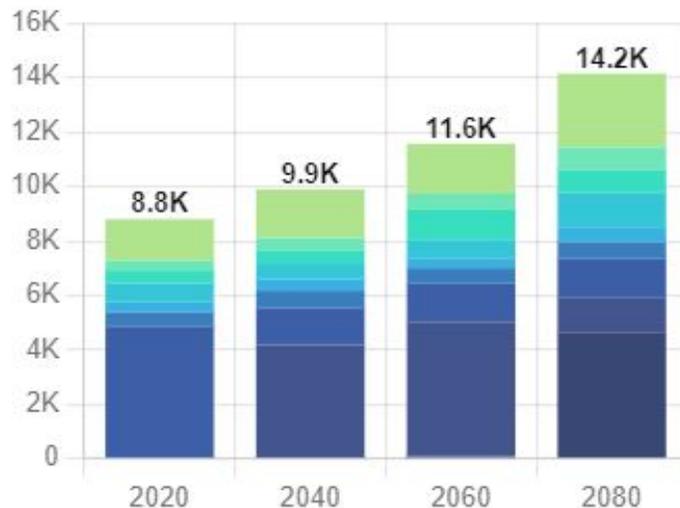
Select Area of Interest:

Locality

Coastal Flood Time Horizon:

2020 2040 2060 **2080**

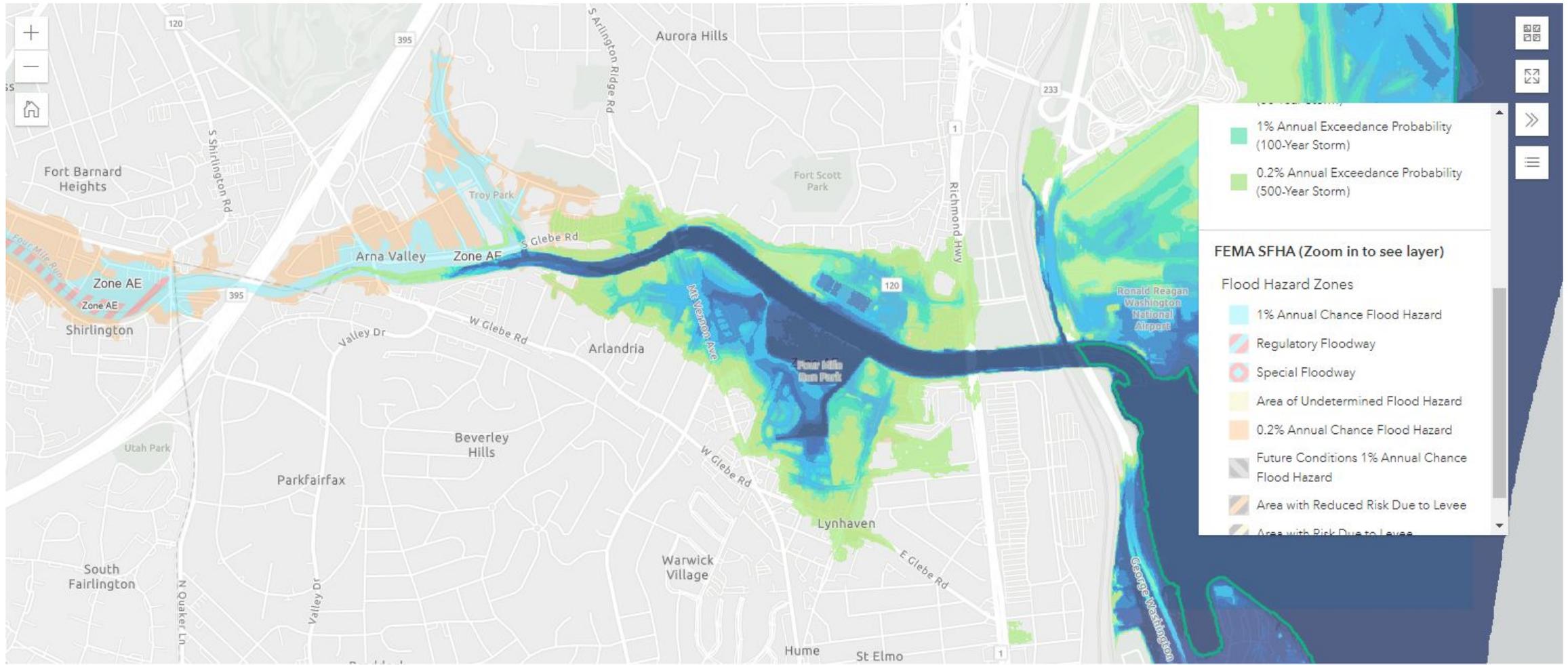
Acres of Land Area Inundated Across Flood Event Type



Tabular Hazards Data

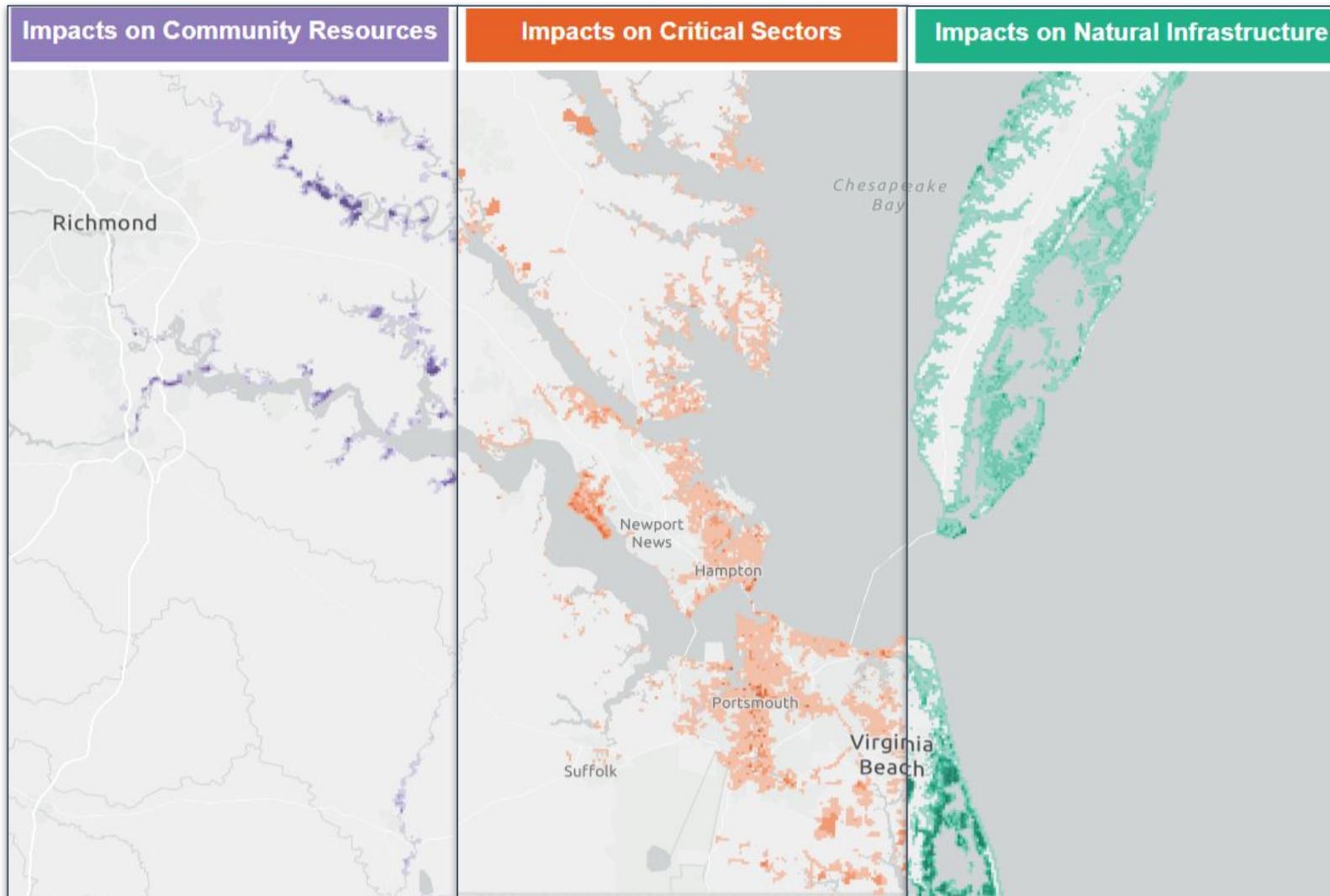
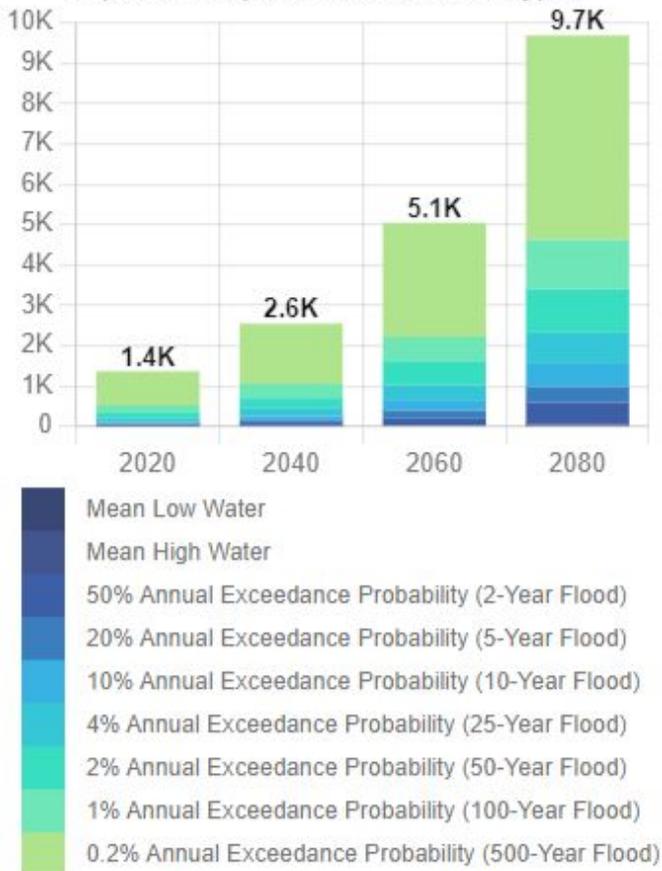
Open Data Portal

Coastal Flood Hazard \neq Total Flood Hazard



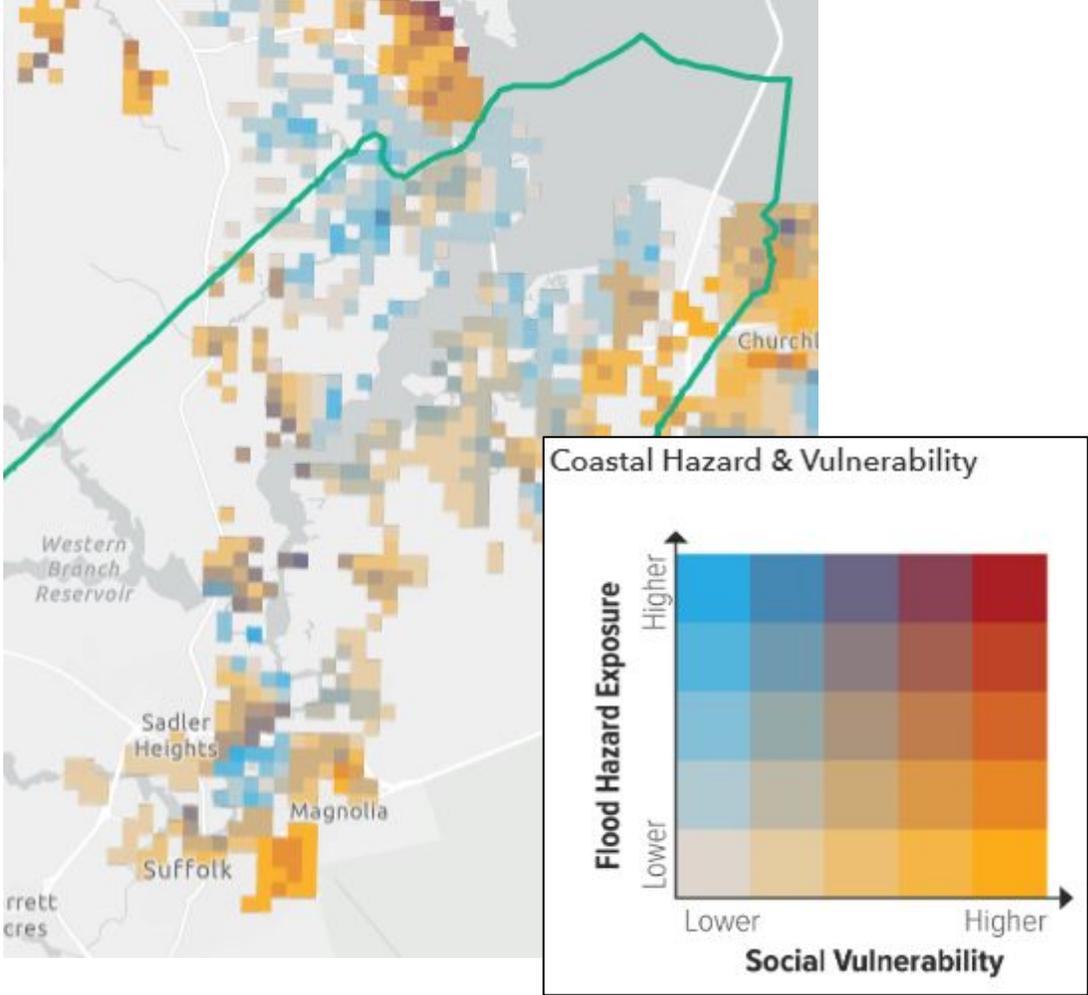
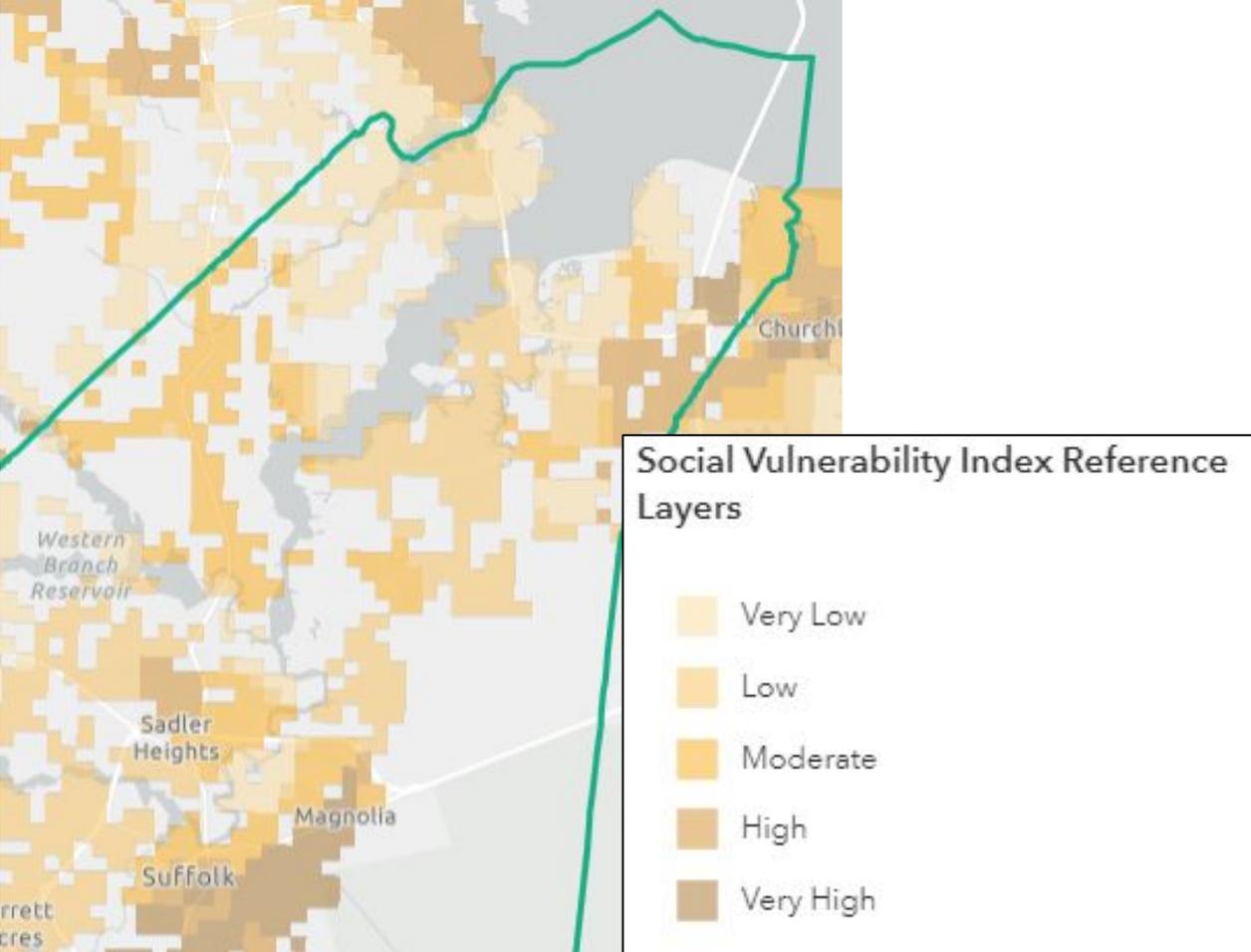
Coastal Flood Hazard Impacts

Population Exposure Across Event Types

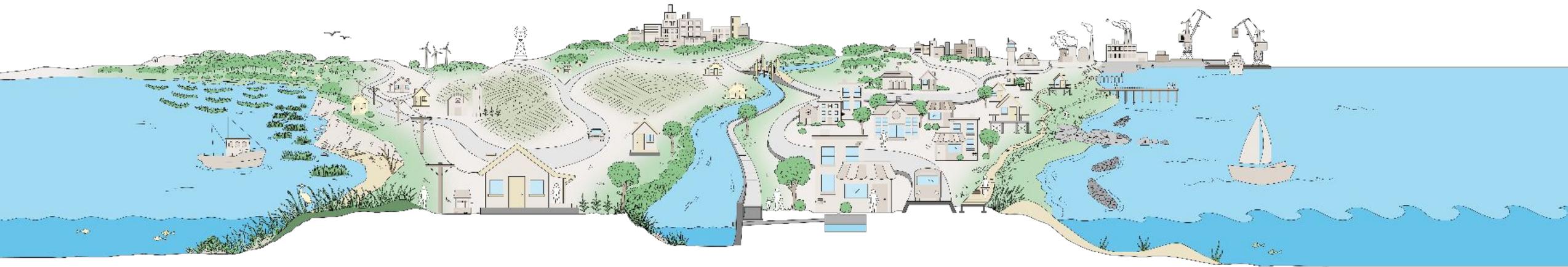


Tabular Impacts Data

Community Context



What We're Doing About It



Building Flood Resilience

Select Area of Interest:

Locality

Filters:

Category:

Hazard Addressed:

Project Class:

[Reset All Filters & Map](#)

Additional Map Layers: [Clear Map Layers](#)

- Coastal Floodplains +
- Community Resource Impact Areas +
- Critical Sector Impact Areas +
- Natural Infrastructure Impact Areas +
- Coastal Hazard and Social Vulnerability +

Search: [Clear](#)

Projects and Initiatives (Features: 14, Selected: 0) ...

<input checked="" type="checkbox"/>	Name	
<input type="checkbox"/>	Downtown Suffolk Drainage Improvements	
<input type="checkbox"/>	Emergency Shelter Retrofits	
<input type="checkbox"/>	First Avenue Drainage	
<input type="checkbox"/>	Flood risk/vulnerability assessment of Hampton Roads highway interchanges	
<input type="checkbox"/>	Hampton Roads Regional Roadway Flooding Sensor Network	
<input type="checkbox"/>	Jefferson Street Drainage Improvements	
<input type="checkbox"/>	Kimberly Bridge	
<input type="checkbox"/>	Olde Towne Drainage	
<input type="checkbox"/>	Public Facility Flood Risk/Vulnerability Assessments	
<input type="checkbox"/>	Pughsville Phase II	
<input type="checkbox"/>	Sadler Heights Drainage Project	
<input type="checkbox"/>	Steeple Drive Drainage Improvements	

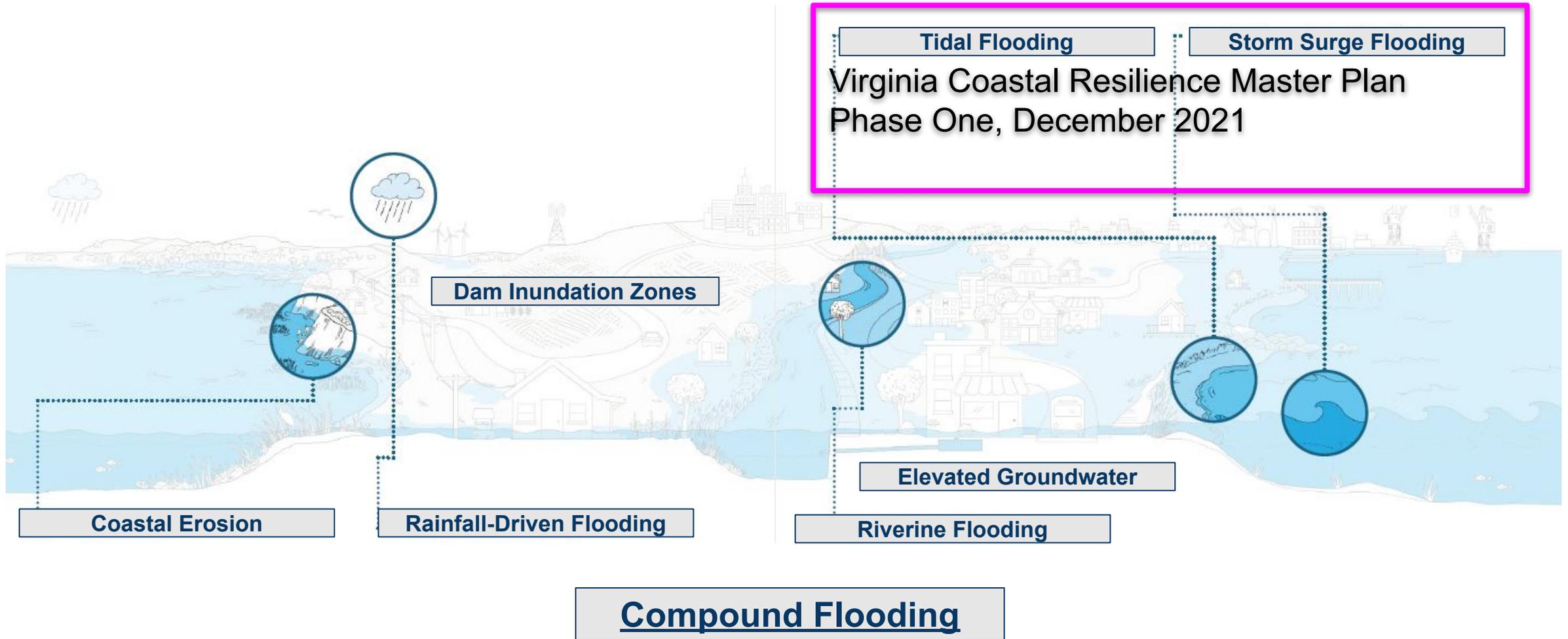


Funding Flood Resilience

VA Funding for Projects (Features: 96, Selected: 0)

Name	Administering Office	Funding Source	Funding Type	Purpose
Addressing the Impacts of Multiple Stressors on Shellfish Aquaculture Through Research/Industry Partnerships	National Oceanic and Atmospheric Administration (NOAA) Oceanic and Atmospheric Research	NOAA	Federal	Supports: establishing, continuing, and/or expanding collaboration between researchers and shellfish growers in order to address how acidification and at least one other environmental stressor affects the U.S. shellfish aquaculture industry. Project multiple parameter physical, chemical, or biological observing systems and/or conduct multiple stressor experimental research. Priorities of this funding opportunity are to (1) build or strengthen relationships between the shellfish aquaculture industry and aquaculture research community (including university, industry, private sector, tribal, state, and/or federal scientists representing various perspectives), (2) develop scientific knowledge on the impact of ocean and coastal acidification in combination with other stressors on shellfish aquaculture, and (3) create data products, tools, technologies, management practices, or other deliverables that are applicable to building resilience within the shellfish aquaculture sector.
Building Resilience Against Climate Effects: Implementing and Evaluating Adaptation Strategies that Protect and Promote Human Health	National Center for Environmental Health	CDC	Federal	Supports: the building and enhancement of the resilience of U.S. cities and states to the health impacts of climate change through overarching strategies. These strategies include 1) collaboration with stakeholders to create a Climate Impact Compendium data on local climate projections, health effects, social determinants of health, and current adaptive capacity; 2) implementation and evaluation of adaptation actions that address the threats identified in the Compendium; and 3) use and dissemination of evidence to improve adaptation actions and enhance understanding of effective climate resilience adaptations in public health and research.
Bureau of Indian Affairs (BIA) Tribal Climate Resilience Program	Department of Interior, Bureau of Indian Affairs (BIA), Trust Services, Tribal Climate Resilience Program	BIA	Federal	Supports: tribal resilience and ocean and coastal management and planning. The Tribal Climate Resilience Program supports tribes to prepare for climate change impacts on tribal trust and trust resources, economies, infrastructure, and human health and safety. Available Funding: - Adaptation planning - Ocean and Coastal Management Planning - Capacity Building - Relocation, Mitigation, or Protect-in-Place Planning - Internships and Youth Engagement

What's Next

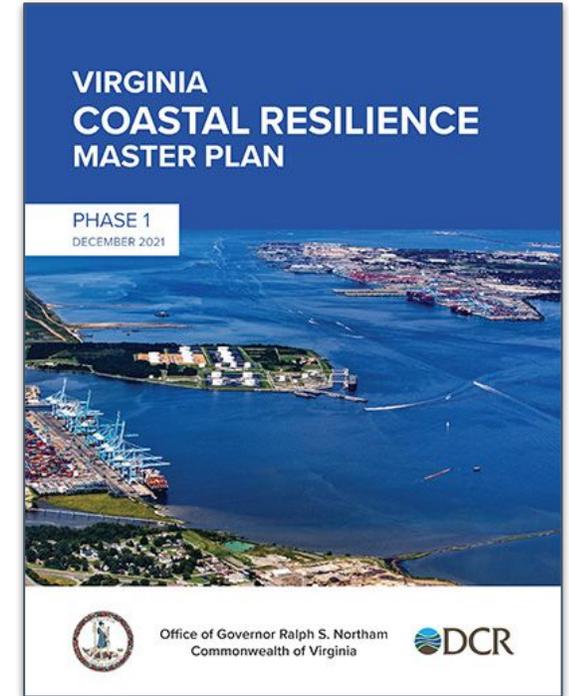
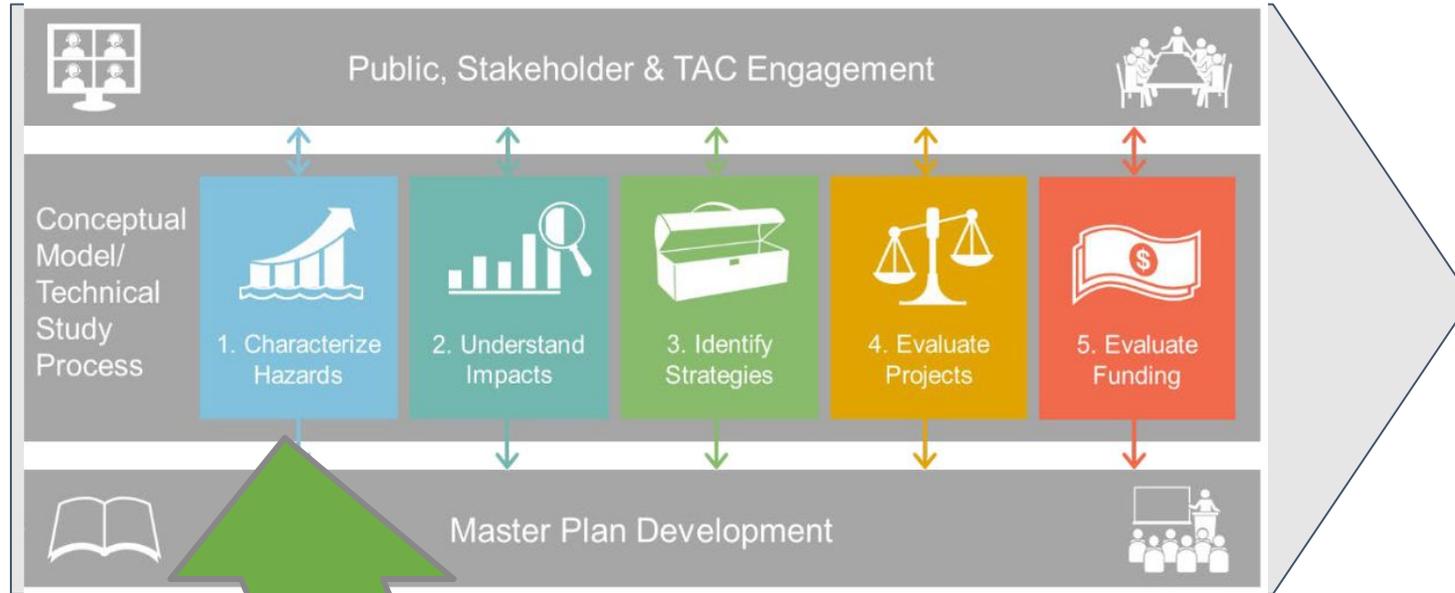


Master Plan Centralized Survey Results

Flood Hazard Priority by Master Planning Region

Hampton Roads (HRPDC)	Rural Coastal (NNPDC, MPPDC, A-NPDC)	Fall Line South (Crater PDC, PlanRVA)	Fall Line North (NVRC, GWRC)
<ol style="list-style-type: none"> Rainfall-Driven Flooding Storm Surge Impacts Tidal Flooding Riverine Flooding Coastal Erosion Groundwater Impacts 	<ol style="list-style-type: none"> Rainfall-Driven Flooding Tidal Flooding Coastal Erosion Storm Surge Impacts Groundwater Impacts Riverine Flooding 	<ol style="list-style-type: none"> Rainfall-Driven Flooding Riverine Flooding Tidal Flooding Storm Surge Impacts Coastal Erosion Groundwater Impacts 	<ol style="list-style-type: none"> Rainfall-Driven Flooding Riverine Flooding Coastal Erosion Tidal Flooding Storm Surge Impacts Groundwater Impacts

Adaptive Program Management



Learn and Improve

QUESTIONS



Website:

dcr.virginia.gov/crmp/

Email Questions or Comments to:

Flood.Resilience@dcr.virginia.gov